TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT

TREATMENT OF MLLW BATTERIES

Identification No.: RL-MW017
Date: October 2001

Program: Mixed Waste
OPS Office/Site: Richland Operations Office/Hanford Site
PBS No.: RL-CP02
Waste Stream: 3470 – Commercial Stabilization Feed
TSD Title: TBD
Operable Unit (if applicable): N/A
Waste Management Unit (if applicable): N/A
Facility: Future M-91 Facility.

Priority Rating:

This entry addresses the "Accelerated Cleanup: Paths to Closure (ACPC)" priority:

____ 1. Critical to the success of the ACPC.
____ 2. Provides substantial benefit to ACPC projects (e.g., moderate to high life-cycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays).
_X_ 3. Provides opportunities for significant, but lower cost savings or risk reduction, and may reduce uncertainty in ACPC project success.

***Need Title*:** Treatment of MLLW Batteries.

Need/Opportunity Category: *Technology Need* -- There is no existing or currently identified technology capable of solving the Site's problem (i.e., technology gap exists, no baseline approach has been identified).

***Need Description*:** Develop and demonstrate a technology for treating MLLW cadmium batteries to meet LDRs. (Lead acid MLLW batteries can now be treated by macroencapsulation in accordance with an EPA interpretation issued in 2001, so they are no longer included in this technology need).

Schedule Requirements:

Earliest Date Required: (10/01/05)

Latest Date Required: 2012

Wastes are now stored under Federal Facility Compliance Agreement (FFCA) exemption from the 1-year storage prohibition granted to the U.S. Department of Energy (DOE). If the U.S. Environmental Protection Agency (EPA) removes this exemption, DOE would have 1 year to meet requirements. No schedule currently exists for removal of the storage prohibition exemption. 2012 is the current date assumed for the site being "current" on all waste treatment.

***Problem Description*:** Currently not permitted to dispose of MLLW batteries.

Potential Life-Cycle Cost Savings of Need (in $000s) and Cost Savings Explanation: None. This technology will allow battery disposal if required, but will yield no cost savings.

Benefit to the Project Baseline of Filling Need: Provide treatment technology in event treatment is required.

Relevant PBS Milestone: N/A

***Functional Performance Requirements*:** The technology must be able to treat MLLW batteries to meet LDR. Current non-radioactive *Resource Conservation and Recovery Act of 1976* (RCRA) treatment requires recovery of battery metals by thermal treatment.

***Work Breakdown Structure (WBS) No.*:**	***TIP No.:***
1.2.2	N/A

***Justification For Need*:**

Technical: Technology does not exist to treat MLLW cadmium batteries to meet LDR.

Regulatory: Currently not allowed to dispose of MLLW cadmium batteries.

Environmental Safety & Health: There are occupational and health concerns associated with storing and handling the MLLW batteries.

Cultural/Stakeholder Concerns: Disposal or treatment of batteries is an expected outcome.

Other: N/A.

Current Baseline Technology:

End-User: Waste Management.

Contractor Facility/Project Manager: TBD.

Site Technical Point-of-Contact: Dale Black, Fluor Hanford, Inc. (FH), (509) 376-8458, Fax (509) 372-1441, Dale_G_Black@rl.gov.

DOE End-User/Representative Point-of-Contact: Kevin Leary, DOE-RL, (509) 373-7285, Fax (509) 372-1926, Kevin_D_Leary@rl.gov.

Waste volume, m^3	Current inventory - Two drum equivalents of cadmium batteries
Waste form	MLLW batteries
Waste stream I.D.	3470
Contaminants and co-contaminants	Cadmium, low levels of alpha, beta and gamma radiation
Function of technology	Processing (meet LDR)
Source category	Various Hanford Site programs